8. The process according to one of the claims 1 to 7, wherein the process temperature of step b) is in the range of -100°C to -40°C.

9. The process according to one of the claims 2 to 8, wherein the weight average molecular weight of butyl rubber as measured prior to bromination is in the range of 200 to 1000 kg/mol.

10. The process according to one of the claims 1 to 9, wherein the reaction is performed in a polymerization reactor, and wherein the viscosity of the solution at the discharge of the polymerization reactor is less than 2000 cP.

11. The process according to one of the claims 1 to 10, wherein the solids content of the rubber solution obtained following in step b) is in the range of from 3 to 25 %.

12. The process according to one of the claims 1 to 11, wherein molecular bromine is used as brominating agent.

13. The process according to one of the claims 1 to 12, wherein the amount of brominating agent used is in the range of from 0.1 to 20 % by weight of the rubber.

14. The process according to one of the claims 1 to 13, wherein the oxidizing agent are selected from the group consisting of peroxides and peroxide forming substances.

15. The process according to one of the claims 1 to 14, wherein the oxidizing agents are used in combination with surfactants.

16. The process according to one of the claims 1 to 15, wherein the oxidizing agent is hydrogen peroxide.

17. The process according to claim 16, wherein the weight ratio of hydrogen peroxide to water within the reaction mixture is below 1:100.

18. The process according to one of the claims 1 to 17, wherein the amount of oxidizing agent used is from 0.2 to 5 mol of oxidizing agent per mol of brominating agent.

19. The process according to one of the claims 1 to ~~19~~ 18, wherein the oxidizing agent is added concurrently or before the brominating agent is added.

20. The process according to one of the claims 1 to 19, wherein the process further comprises the curing of the brominated rubber obtained in step d).

21. Use of a brominated rubber prepared according to one of the claims 1 to 19 to prepare cured brominated rubbers.

22. Use of a brominated rubber prepared according to one of the claims 1 to 21 or a cured brominated rubber prepared according to one of the claims 1 to 21 as a part of a tyre.